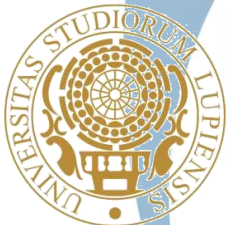




**Istituto Nazionale di  
Geofisica e Vulcanologia**



**UNIVERSITÀ  
DEL SALENTO**



**TREASURE**  
TRAINING RESEARCH AND  
APPLICATIONS NETWORK TO  
SUPPORT THE ULTIMATE REAL TIME  
HIGH ACCURACY EGNSS SOLUTION



# **Technical Feasibility of ICT Architecture for GNSS High Accuracy Positioning**

## **SUPERVISORS:**

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## **HOST INSTITUTION:**

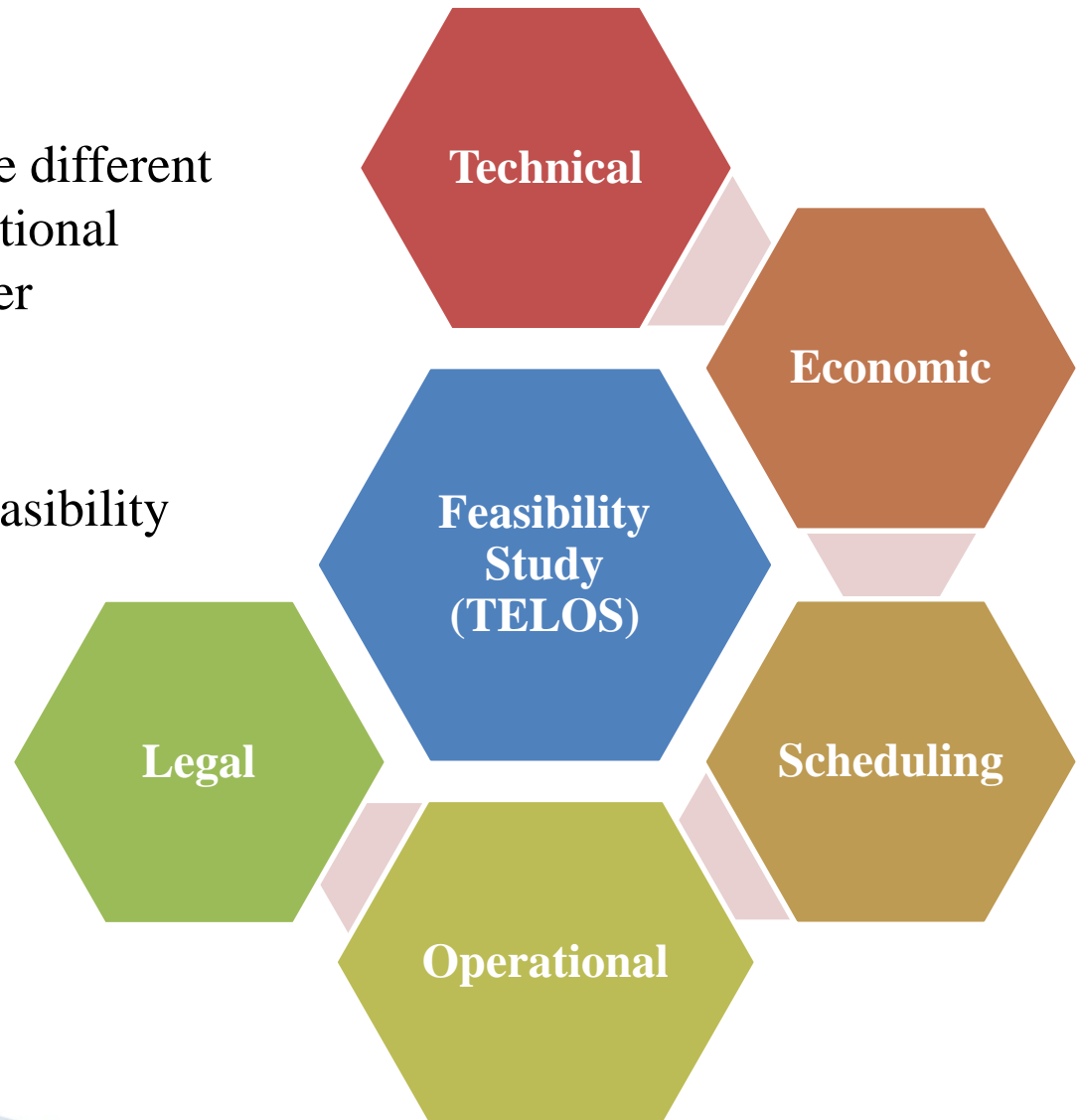
INGV

**Hossein Ghobadi**

**18/04/2018**

# FEASIBILITY STUDY

- Definition – to measure different impact on the organizational characteristic; fulfil user requirements
- Essential Factors of Feasibility Study (TELOS)



# TECHNICAL FEASIBILITY

## FACTORS CONSIDERED TO CHOOSE THE BEST TECHNICAL SOLUTION

- Survey of users' requirements
  - Scheduling
  - Location selection
  - Raw material selection
  - Capacity planning
  - Utility selection

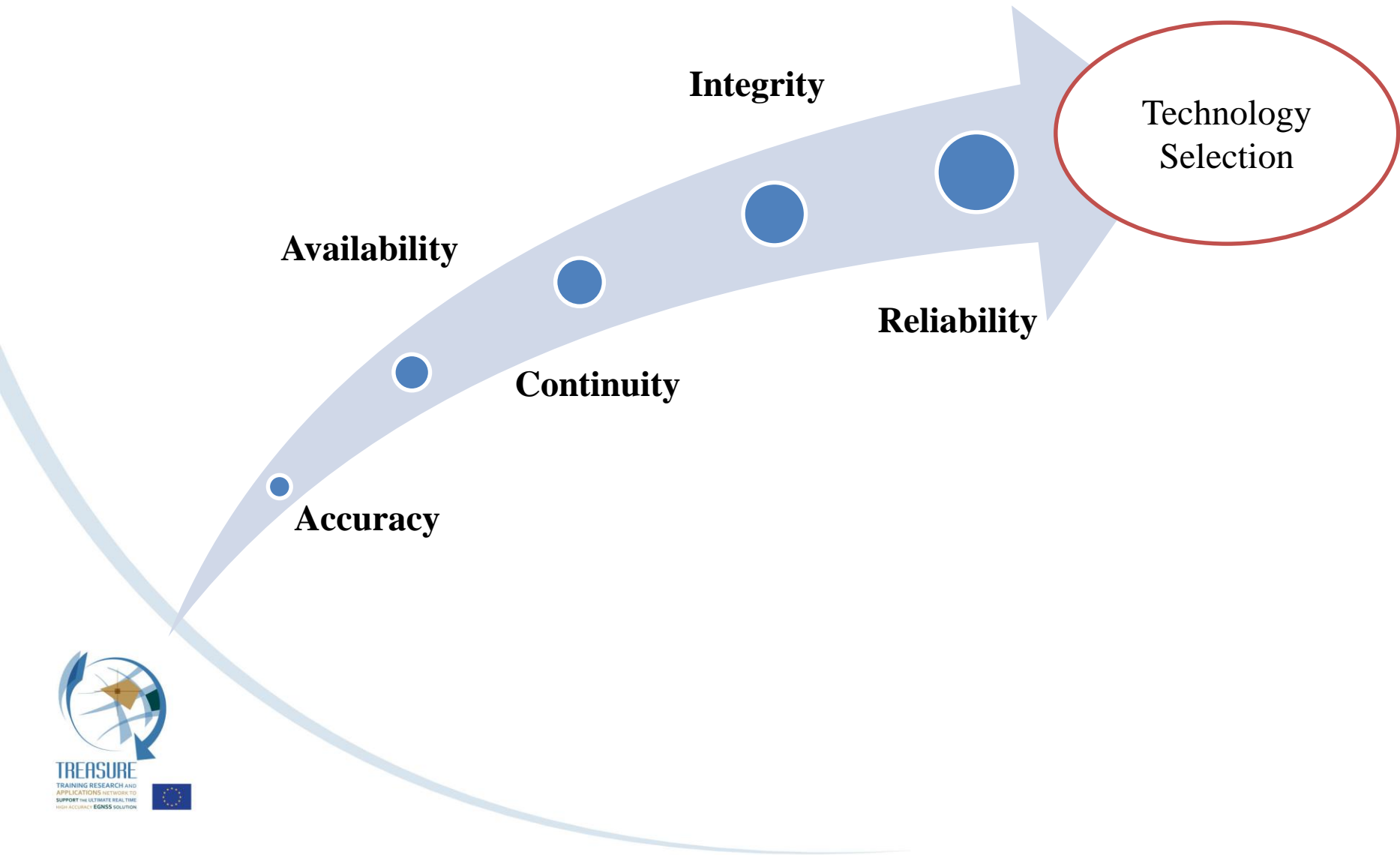
TECHNOLOGY SELECTION



- TIME
- SPACE

# TECHNOLOGY SELECTION FOR GNSS HIGH ACCURACY POSITIONING

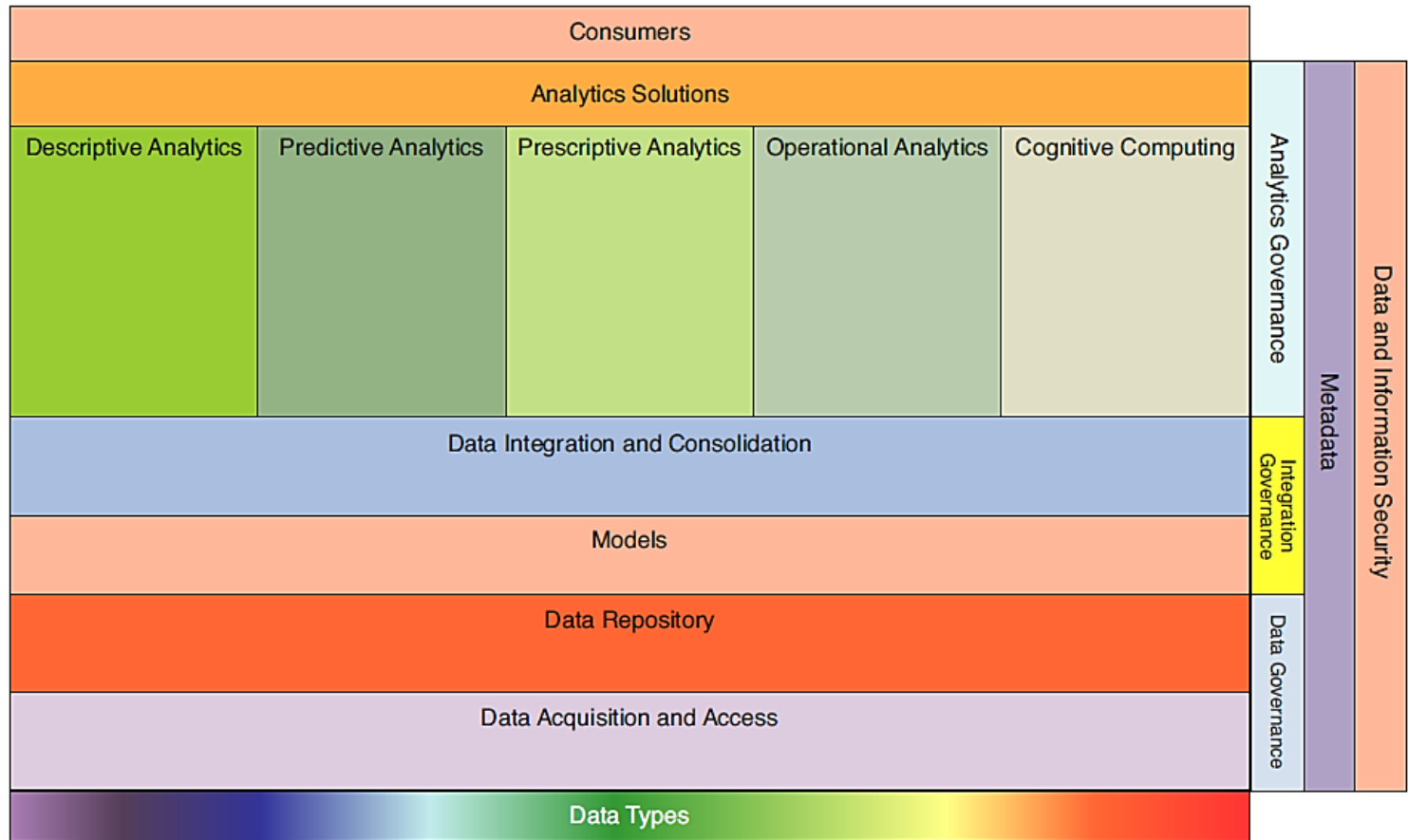
## TFS Approach



# Infrastructure Architecture

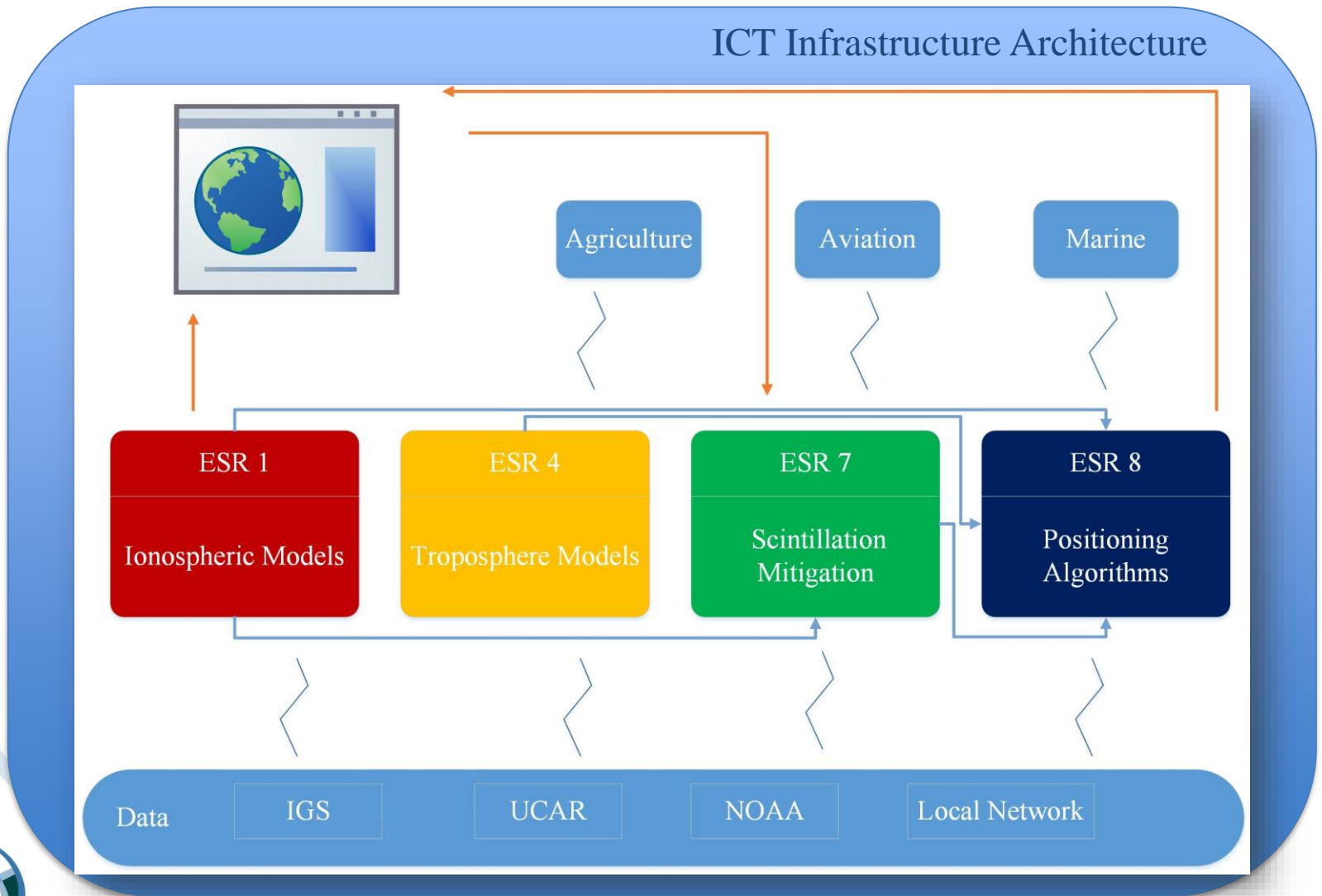
- Networks
- Hosting – cloud based services : Infrastructure as a Service (IaaS), Platform as a Service (PaaS) and Software as Service (SaaS)
- High Availability and Fault Tolerance
- Disaster Recovery
- Capacity Planning

# Analytics Architecture



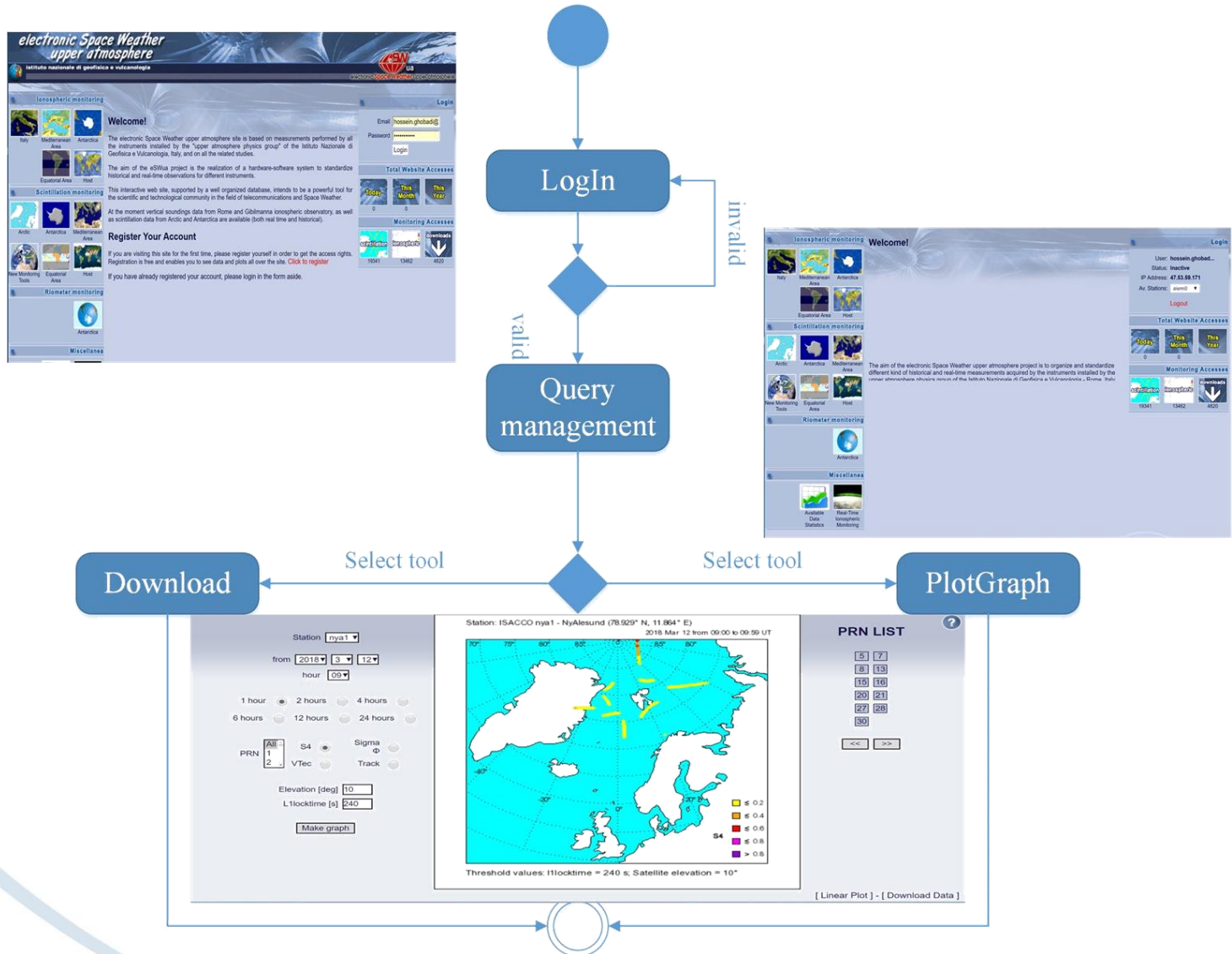
**Fig 1.** A layered view of an analytics reference architecture (Mitra T, et al. 2015).

# Case Study: ESRs Interactions



**Fig 2.** Intellectual interactions in the frame of TREASURE

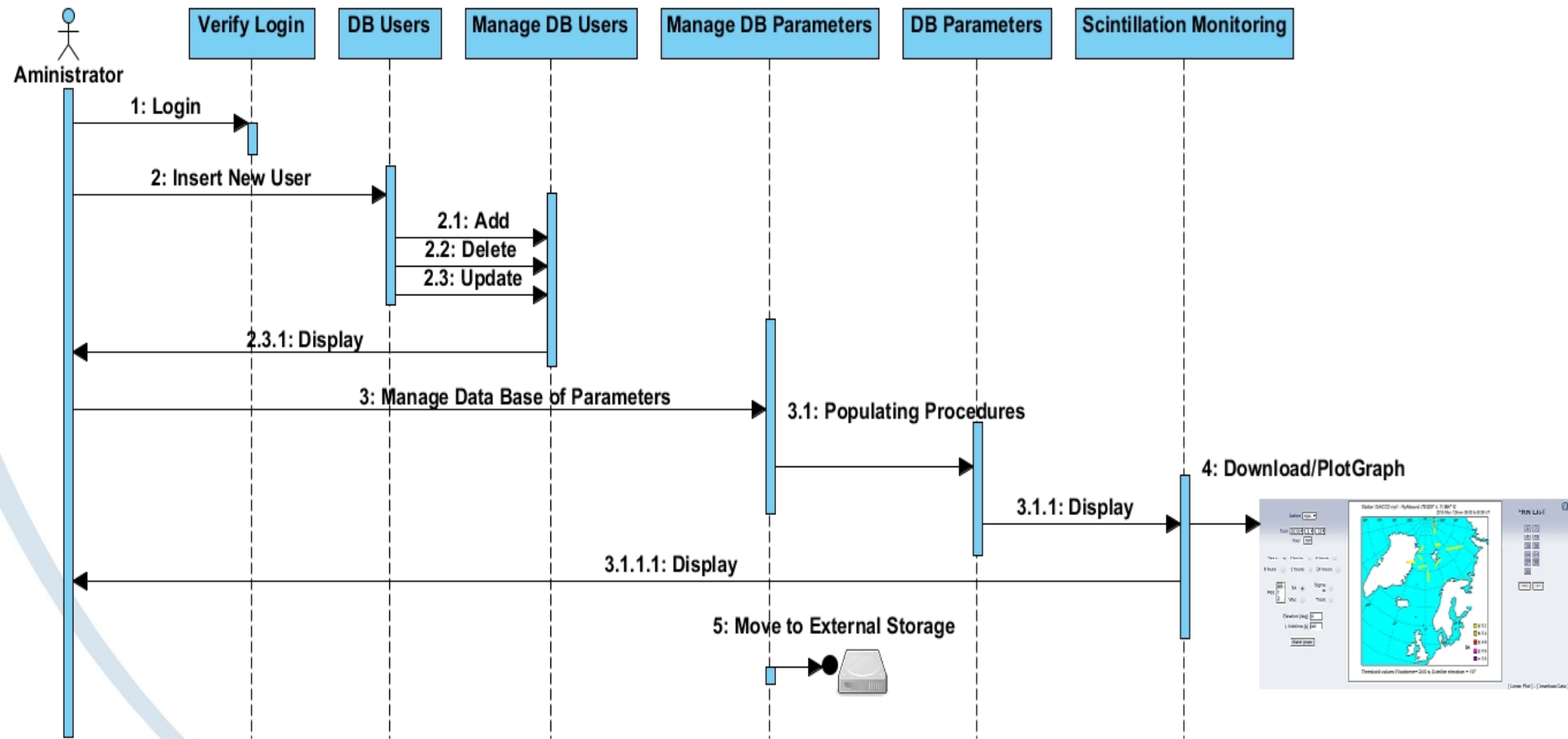
# Activity Diagram



**Fig 3.** User Activity diagram – scintillation monitoring



# Sequence Diagram



**Fig 4.** Administrator Sequence diagram – scintillation monitoring

# First-Phase Questionnaire

## Input and Output

- Repository
- Communication Protocol
- Latency
- Format
- Size
- Sample Rate

## Process

- Operating System
- Memory
- Processor
- Programming Language
- Compiler
- Execution Time

The questionnaire will be sent  
soon!

# THANK YOU

## Q & A

# Back up

- Network

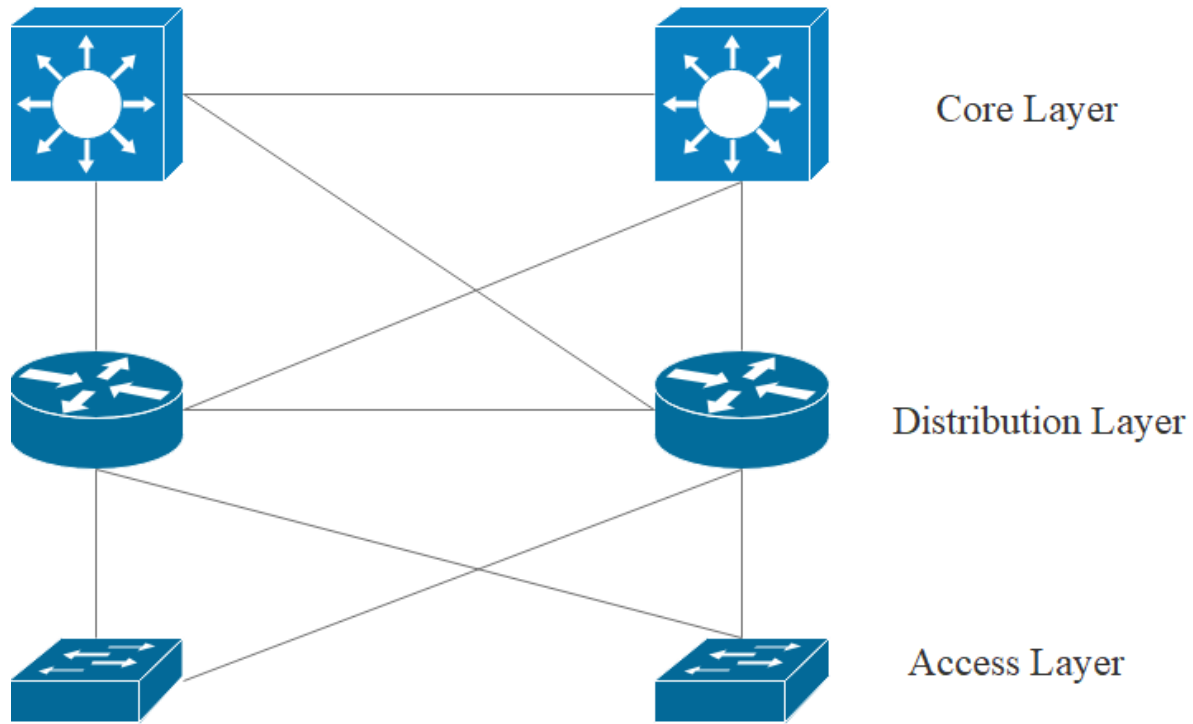


Figure 2. Standard tree-layered network hierarchical model